30-1-3. PURPOSE

30-1-3.14. Flood damage prevention purposes.
The flood damage prevention regulations, adopted and prescribed in this Ordinance, are found by the City Council to be necessary and appropriate to:
(A) Permit only that development within the floodplain which is appropriate in light of the probability of flood damage and which represents a reasonable social and economic use of land in relation to the hazards involved; and
(B) Minimize public and private losses due to flood conditions within flood prone areas ~~in specific areas~~ by enactment of provisions designed to:
(1) Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities;
(2) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
(3) Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;
(4) Control filling, grading, dredging, and all other development which may increase erosion or flood damage;
(5) Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands;
(6) Protect human life and health;
(7) Minimize expenditure of public money for costly flood control projects;
(8) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
(9) Minimize prolonged business losses and interruptions;
(10) Minimize damage to public facilities and utilities such as water, sewer, gas, electric, cable and telephone lines and streets and bridges located in flood ~~plains~~ prone areas;
(11) Help maintain a stable tax base by providing for the sound use and development of flood-prone areas ~~in such a manner as to minimize flood blight areas~~;
(12) Permit and encourage the retention of open land uses which will be so located and designed as to constitute a harmonious and appropriate part of the physical development of the community and which will not impede the flow of floodwaters; and
(13) Ensure that potential buyers are ~~notified~~ aware that ~~whenever~~ property is in a Special F~~f~~lood H~~h~~azard A~~a~~rea or Future Conditions Flood Hazard Area.

30-1-9. COMPLIANCE

30-1-9.1. Compliance.
No building, premises, or structure shall be located, extended, altered, constructed, erected, modified, converted, occupied, placed, maintained, or moved, and no land use shall be commenced, maintained, or modified, except as authorized by this Ordinance and other applicable regulations.

30-2-1. DEFINITION INDEX
TABLE INSET:

Defined Word	Ordinance Reference
Addition (to an existing building)	30-2-2.1
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Chemical Storage Facility	30-2-2.6
Current Conditions Hydrology	30-2-2.6
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Existing Manufactured Dwelling Park or Manufactured Dwelling Subdivision	30-2-2.6
Flood Insurance	30-2-2.6
Flood Insurance Study (FIS)	30-2-2.6
Flood Zone	30-2-2.6
~~Flood Plain-~~ Floodplain (flood prone area)	30-2-2.6
Floodplain Administrator (Enforcement Officer)	30-2-2.6
Floodplain Management	30-2-2.6
Floodplain Management Regulations	30-2-2.6
~~Floodway Fringe~~	~~30-2-2.6~~
~~Floor (Flood Damage Prevention)~~	~~30-2-2.6~~
Freeboard	30-2-2.6
Functionally Dependent Facility	30-2-2.6
Future Conditions Flood	30-2-2.6
Future Conditions Flood Elevation	30-2-2.6
Future Conditions Flood Hazard Area	30-2-2.6
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Lowest Adjacent Grade (LAG)	30-2-2.6
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Non-Encroachment Area	30-2-2.6
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Remedy a Violation	30-2-2.6
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Solid Waste Disposal Facility	30-2-2.7
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30-2-2.1. Buildings and structures.

Addition (to an existing building). An extension or increase in the floor area or height of a building or structure.

30-2-2.6. Flood damage prevention.

Area of shallow flooding. A designated Zone AO on a community's Flood Insurance Rate Map (FIRM) with base flood depths determined to be from one (1) to three (3) feet. These areas are located where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

Area of special flood hazard (special flood hazard area). The land in the ~~floodway~~ floodplain ~~or the floodway fringe within the City,~~ subject to a one (1) percent or greater chance of flooding in any given year based on current conditions hydrology as determined in Section 30-7-5.2(D) of this Ordinance.

Base flood. The flood having a one (1) percent chance of being ~~equalled~~ equaled or exceeded in any given year ~~(100-year flood)~~ based on current conditions hydrology.

Base flood elevation (BFE). ~~The elevation, in feet above sea level, reached by the base flood~~ A determination of the water surface elevations of the base flood based on current conditions hydrology as published in the Flood Insurance Study. When the BFE has not been provided in a "Special Flood Hazard Area", it may be obtained from engineering studies available from a Federal or State or other source using FEMA approved engineering methodologies. This elevation, when combined with the "Freeboard", establishes the "Regulatory Flood Protection Elevation" in Special Flood Hazard Areas.

Basement. ~~The lowest level or story which has its floor subgrade on all sides~~ Any area of the building having its floor subgrade (below ground level) on all sides. (This definition applies only with respect to flood damage prevention regulations.)

Chemical Storage Facility. A building, portion of a building, or exterior area adjacent to a building used for the storage of any chemical or chemically reactive products.
Current Conditions Hydrology. The flood discharges associated with the land-use conditions existing within the drainage area of a watercourse at the time a flood study of the watercourse was conducted. Current conditions flood discharges and historical flood study information are published in the Flood Insurance Study.
Elevated building. A non-basement building ~~(a) built to have the top of the~~ which has its lowest ~~floor~~ elevated floor raised above ~~the~~ ground level by foundation walls, shear walls, posts, piers ~~means of~~ pilings, or ~~columns (posts and piers), or shear walls parallel to the flow of water, and (b) adequately anchored so as not to impair the structural integrity of the building during a flood up to the magnitude of the base flood. Also, a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of floodwaters~~ columns.
Encroachment. The advance or infringement of uses, fill, excavation, buildings, structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.
Existing Manufactured Dwelling Park or Manufactured Dwelling Subdivision. A manufactured dwelling park or subdivision for which the construction of facilities for servicing the lots on which the manufactured dwelling is to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) was completed before the original effective date of the floodplain management regulations adopted by the community (December 20, 1971).
Flood insurance. The insurance coverage provided under the National Flood Insurance Program.
Flood insurance rate map (FIRM). An official map of the community ~~on which~~ issued by the Federal Emergency Management Agency (FEMA), ~~has delineated~~ on which ~~both~~ the ~~areas of s~~Special F~~f~~lood ~~h~~Hazard Areas, the Future Conditions Flood Hazard Areas, and the risk premium zones applicable to the community are delineated.
Flood insurance study (FIS). An examination, evaluation, and determination of flood hazards, corresponding water surface elevations (if appropriate), flood hazard risk zones, and other flood data in a community issued by the Federal Emergency Management Agency. The Flood Insurance Study report includes Flood Insurance Rate Maps (FIRMs) and Flood Boundary and Floodway Maps (FBFMs), if published.~~The official report provided by FEMA. The report includes flood profiles and the Floodway Data Table~~.
Flood Zone. A geographical area shown on a Flood Hazard Boundary Map or Flood Insurance Rate Map that reflects the severity or type of flooding in the area.
~~*Flooding, area of shallow.* A designated AO or VO Zone on a community's Flood Insurance Rate Map (FIRM) with base flood depths from one (1) to three (3) feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.~~
~~*Flood plain*~~ *Floodplain (flood prone area).* Any land area susceptible to being inundated by water from any source.~~The relatively flat area or low land adjacent to the channel of a river, stream, or other watercourse, lake, or other body of standing water which has been or may be covered by floodwater.~~
Floodplain Administrator (Enforcement Officer). The individual appointed to administer and enforce the floodplain management regulations.
Floodplain Management. The operation of an overall program of corrective and preventive measures for reducing flood damage and preserving and enhancing, where possible, natural

resources in the floodplain, including, but not limited to, emergency preparedness plans, flood control works, floodplain management regulations, and open space plans.
Floodplain Management Regulations. This Ordinance and other zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances, and other applications of police power which control development in flood prone areas. This term describes federal, state or local regulations, in any combination thereof, which provide standards for preventing and reducing flood loss and damage.
Floodproofing. Any combination of structural and nonstructural additions, ~~provisions,~~ changes, or adjustments to ~~properties and/or~~ structures, ~~subject to flooding primarily for the~~ which reduce~~tion~~ or eliminate~~ion of~~ flood damage to real estate or improved real property, water and sanitation facilities, structures, and their contents.
~~*Floodway fringe*. The land area located between the floodway and maximum elevation subject to inundation by the base flood as defined herein.~~
~~*Floor*. The top surface of an enclosed area in a building (including basement), i.e., top of slab in concrete slab construction or top of wood flooring in wood frame construction. The term does not include the floor of a garage used solely for parking vehicles.~~
Freeboard. The height added to the Base Flood Elevation (BFE) or the Future Conditions Flood Elevation to account for the many unknown factors that could contribute to flood heights greater that the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization on the watershed. The Base Flood Elevation plus the freeboard establishes the "Regulatory Flood Protection Elevation".
Functionally Dependent Facility. A facility which cannot be used for its intended purpose unless it is located in close proximity to water, such as a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, or ship repair. The term does not include long-term storage, manufacture, sales, or service facilities.
Future Conditions Flood. The flood having a one (1) percent chance of being equaled or exceeded in any given year based on future conditions hydrology.
Future Conditions Flood Elevation. A determination of the water surface elevations of the one percent (1%) annual chance flood based on future conditions hydrology as published in the Flood Insurance Study. This elevation, when combined with the freeboard, establishes the "Regulatory Flood Protection Elevation" in Future Conditions Flood Hazard Areas.
Future Conditions Flood Hazard Area. The land area that would be inundated by the one percent (1%) annual chance flood based on future conditions hydrology as determined in Section 30-7-5.2(D) of this ordinance.
Future Conditions Hydrology. The flood discharges associated with projected land-use conditions based on the City of Greensboro's zoning maps and comprehensive land-use plans and without consideration of projected future construction of flood detention structures or projected future hydraulic modifications within a stream or other waterway such as bridge and culvert construction, fill, and excavation. Future conditions flood discharges are published in the Flood Insurance Study.
Hazardous Waste Facility. Pursuant to NCGS Article 9 of Chapter 130A, a facility for the collection, storage, processing, treatment, recycling, recovery, or disposal of hazardous waste.
Highest adjacent grade. The highest natural elevation of the ground surface, prior to construction, immediately next to the proposed walls of the structure.
Lowest Adjacent Grade (LAG). The elevation of the ground, sidewalk or patio slab immediately next to the building, or deck support, after completion of the building.

Lowest floor. The lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access, or limited storage in an area other than a basement area is not considered a building's lowest floor, provided that such an enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this Ordinance.

Manufactured dwelling park or subdivision. A parcel (or contiguous parcels) of land divided into two or more manufactured dwelling spaces for rent or lots for sale. (This definition applies only with respect to flood damage prevention regulations.)

Market value. The building value, not including the land value and that of any accessory structures or other improvements on the lot. Market value may be established by independent certified appraisal; replacement cost depreciated for age of building and quality of construction (Actual Cash Value); or adjusted tax assessed values. (This definition applies only with respect to flood damage prevention regulations.)

Mean sea level. For purposes of this Ordinance, the National Geodetic Vertical Datum (NGVD) as corrected in 1929, the North American Vertical Datum (NAVD) as corrected in 1988, or other vertical control datum used as a reference for establishing varying elevations within the floodplain, to which Base Flood Elevations (BFEs) shown on a FIRM are referenced. Refer to each FIRM panel to determine datum used. ~~The average height of the sea for all stages of the tide. It is used as reference for establishing various elevations within the flood plain. For purposes of this Ordinance, the term is synonymous with National Geodetic Vertical Datum (NGVD).~~

National geodetic vertical datum (NGVD). The vertical control used as a reference for establishing varying elevations within the flood plain. ~~(Land at elevation eight hundred (800) feet using NGVD is at 800.761 feet using City of Greensboro datum.)~~

To Convert From	To	Add
NGVD 1929 Datum	NAVD 1988 Datum	-0.76 feet
NAVD 1988 Datum	NGVD 1929 Datum	+0.76 feet
NGVD 1929 Datum	City of Greensboro Datum	+0.761 feet
City of Greensboro Datum	NGVD 1929 Datum	-0.761 feet
NAVD 1988 Datum	City of Greensboro Datum	+1.521 feet
City of Greensboro Datum	NAVD 1988 Datum	-1.521 feet

New construction. Structures for which the "start of construction" commenced on or after the effective date of the original version of the community's Flood Damage Prevention Ordinance and includes any subsequent improvements to such structures. ~~Structures for which the "start of construction" commenced on or after the effective date of this Ordinance, including any subsequent improvements to such structures. Also, any walled or roofed addition to an existing building which is connected by a firewall or is separated by independent perimeter load-bearing walls.~~(This definition applies only with respect to flood damage prevention regulations.)

Non-Encroachment Area. The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot as designated in the Flood Insurance Study report.

Obstruction. Any dam, wall, embankment, levee, dike, pile, abutment, spoil material, bridge, conduit, culvert, building, wire, fence, refuse, fill, structure, or matter in, along, across, or projecting onto any channel, watercourse, or special ~~regulatory~~ flood hazard area which may impede, retard, or change the direction of the flow of water, either in itself or by catching or

collecting debris carried by such water, or that is placed where the flow of water might carry the same downstream to the damage of life or property.

Post-FIRM. Applies to construction or other development for which the "start of construction" occurred on or after the effective date of the initial Flood Insurance Rate Map for the area.

Pre-FIRM. Applies to construction or other development for which the "start of construction" occurred before the effective date of the initial Flood Insurance Rate Map for the area.

Principally Above Ground. Refers to at least 51% of the actual cash value of the structure is above ground. (This definition applies only with respect to flood damage prevention regulations.)

Reference Level. The top of the lowest floor for structures within Special Flood Hazard Areas and Future Conditions Flood Hazard Areas designated as Zone A1-A30, AE, A, A99, AO, or X (Future).

Regulatory Flood Protection Elevation. The elevation above mean sea level to which the reference level of all structures and other development located within Special Flood Hazard Areas and Future Conditions Flood Hazard Areas must be protected. In "Special Flood Hazard Areas" where Base Flood Elevations (BFEs) have been determined, this elevation shall be the BFE plus one (1) foot of freeboard. In "Special Flood Hazard Areas" where no BFE has been established, this elevation shall be at least two (2) feet above the highest adjacent grade. In Future Conditions Flood Hazard Areas this elevation shall be the Future Conditions Flood Elevation plus one (1) foot of freeboard.

Remedy a Violation. To bring the structure or other development into compliance with floodplain management regulations in this Ordinance, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the Ordinance or otherwise deterring future similar violations, or reducing Federal financial exposure with regard to the structure or other development.

Riverine. Relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

Start of Construction. The date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured dwelling on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of the building, whether or not that alteration affects the external dimensions of the building. (This definition applies only with respect to flood damage prevention regulations.)

Structure. A walled and roofed building, a manufactured dwelling, or a gas, liquid, or liquefied gas storage tank that is principally above ground. (This definition applies only with respect to flood damage prevention regulations).

Substantial damage. Damage of any origin sustained by a structure during any one-year period whereby the cost of restoring the structure to its before-damaged condition would equal or exceed fifty percent (50%) of the market value of the structure before the damage occurred.

Substantial damage also means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

Substantial improvement. Any combination of repairs, reconstruction, rehabilitation, addition, or other improvement of a structure, taking place during any one-year period, the cost of which equals or exceeds fifty (50) percent of the market value of the structure before the start of construction of the improvement. This term includes structures which have incurred substantial damage, regardless of actual repair work performed. The term does not, however, include either: (1) any project for improvement of a structure to correct existing violations of State or local health, sanitary, or safety code specifications which have been identified by the Enforcement Officer and which are the minimum necessary to assure safe living conditions, or (2) any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure. (This definition applies only with respect to flood damage prevention regulations.)

Violation. The failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Section 30-3-3.4, 30-3-6.4 and 30-7-5.6 is presumed to be in violation until such time as that documentation is provided. (This definition applies only with respect to flood damage prevention regulations.)

Water Surface Elevation (WSE). The height, in relation to mean sea level, of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

Watercourse. A lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

30-2-2.7. General.

Disposal. Pursuant to NCGS 130A-290(a)(6), the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that the solid waste or any constituent part of the solid waste may enter the environment or be emitted into the air or discharged into any waters, including groundwaters.

Historic structure. Any structure that is: 1) listed individually in the National Register of Historic Places (a listing maintained by the US Department of Interior) or preliminarily determined by the Secretary of Interior as meeting the requirements for individual listing on the National Register; 2) certified or preliminarily determined by the Secretary of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; 3) individually listed on a ~~state~~local inventory of historic landmarks in communities with a "Certified Local Government (CLG) program"~~places~~; 4) certified as contributing to the historical significance of a historic district designated by a community with a "Certified Local Government (CLG) program".~~individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified (a) by an approved state program as determined by the Secretary of Interior, or (b) directly by the Secretary of Interior in states without approved programs~~ Certified Local Government (CLG) Programs are approved by the US Department of the Interior in cooperation with the North Carolina Department of Cultural Resources through the State

Historic Preservation Officer as having met the requirements of the National Historic Preservation Act of 1966 as amended in 1980.
Solid Waste Disposal Facility. As defined in NCGS 130A-290(a)(35), any facility involved in the disposal of solid waste.
Solid Waste Disposal Site. As defined in (NCGS 130A-290(a)(36), any place at which solid wastes are disposed of by incineration, sanitary landfill, or any other method.

30-3-3.4. Floodplain development permit application.
A floodplain development permit shall be obtained in conformance with the provisions of this Ordinance prior to the commencement of any development activities within ~~a~~ Special F~~f~~lood H~~h~~azard A~~a~~reas and Future Conditions Flood Hazard Areas. ~~Where otherwise required, a grading permit or building permit may serve as the floodplain development permit.~~ Required information relating to ~~D~~development activities shall include, but not be limited to: the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. The following information is required:
(A) A plan drawn to scale showing the following specific details of the proposed floodplain development: ~~*Lowest Floor Elevation:* Elevation in relation to mean sea level of the proposed lowest floor (including basement) of all structures.~~
(1) The nature, location, dimensions, and elevations of the area of development/disturbance; existing and proposed structures, utility systems, grading/pavement areas, fill materials, storage areas, drainage facilities, and other development;
(2) The boundary of the Special Flood Hazard Area or Future Conditions Flood Hazard Area as delineated on the FIRM, or a statement that the entire lot is within the Special Flood Hazard Area or Future Conditions Flood Hazard Area;
(3) Flood zone(s) designation of the proposed development area as shown on the FIRM;
(4) The boundary of the floodway(s) or non-encroachment area(s);
(5) The Base Flood Elevation (BFE) or Future Conditions Flood Elevation (refer to Sections 30-7-5.2(D); 30-9-10.3(K) and (L); and 30-7-5.6(C)(2));
(6) The old and new location of any watercourse that will be altered or relocated as a result of proposed development;
(7) Certification of the plan by a registered land surveyor or professional engineer.
(B) The proposed elevation of all development within a Special Flood Hazard Area or Future Conditions Flood Hazard Area including but not limited to: ~~*Floodproofing Elevation:* Elevation in relation to mean sea level to which any nonresidential structure will be floodproofed.~~
(1) Elevation in relation to mean sea level of the proposed reference level (including basement) of all structures;
(2) Elevation in relation to mean sea level to which any non-residential structure in Zone AE, A, AO, A1-A30, or X (Future) will be floodproofed; and
(3) Elevation in relation to mean sea level to which any proposed utility systems will be elevated or floodproofed;

(C) If floodproofing, a Floodproofing Certificate *(FEMA Form 81-65)* with supporting data and an operational plan that includes, but is not limited to, installation, exercise, and maintenance of floodproofing measures. ~~*Base Flood Elevation Not Provided:* Where base flood elevation data are not provided, the application for a development permit must show construction of the lowest floor at least two (2) feet above the highest adjacent grade.~~

(D) A foundation plan, drawn to scale, which shall include details of the proposed foundation system to ensure all provisions of this Ordinance are met. These details include but are not limited to: ~~*Watercourse Alteration or Relocation:* Where any watercourse will be altered or relocated as a result of proposed development in a flood hazard area, the application for a development permit shall include: a description of the extent of watercourse alteration or relocation; a report certified by a registered professional engineer on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects on properties located both upstream and downstream; and a map showing the location of the proposed watercourse alteration or relocation.~~

(1) The proposed method of elevation, if applicable (i.e., fill, solid foundation perimeter wall, solid backfilled foundation, open foundation on columns/posts/piers/piles/shear walls);

(2) Openings to facilitate equalization of hydrostatic flood forces on walls in accordance with Section 30-7-5.6(B)(5), when solid foundation perimeter walls are used in Zones A, AO, AE, A1-A30, and X (Future);

(E) Usage details of any enclosed areas below the lowest floor. ~~*Certificate Required:* A floor elevation or floodproofing certificate is required in accordance with Section 30-3-6.4. (Certificate of Floor Elevation/Floodproofing) When a nonresidential structure is floodproofed, the applicant shall provide a certificate from a registered professional engineer or architect that the nonresidential floodproofed structure meets the floodproofing criteria.~~

(F) Plans and/or details for the protection of public utilities and facilities such as sewer, gas, electrical, and water systems to be located and constructed to minimize flood damage;

(G) Copies of all other local, State and federal permits required prior to floodplain development permit issuance (Wetlands, Endangered Species, Erosion and Sedimentation Control, Riparian Buffers, Mining, etc.)

(H) Documentation for placement of recreational vehicles and/or temporary structures, when applicable, to ensure Section 30-7-5.6(B)(4) of this Ordinance is met.

(I) A description of proposed watercourse alteration or relocation, when applicable, including an engineering report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map showing the location of the proposed watercourse alteration or relocation.

(J) *Permit Requirements:* The Floodplain Development Permit shall include, but not be limited to:
(1) A description of the development to be permitted under the floodplain development permit.
(2) The Special Flood Hazard Area or Future Conditions Flood hazard Area determination for the proposed development per available data specified in Section 30-7-5.2(D).
(3) The regulatory flood protection elevation required for the reference level and all attendant utilities.
(4) The regulatory flood protection elevation required for the protection of all public utilities.
(5) All certification submittal requirements with timelines.
(6) A statement that no fill material or other development shall encroach into the floodway or non-encroachment area of any watercourse, as applicable.
(7) The flood openings requirements, if in Zones A, AO, AE, A1-A30, or X (Future).
(8) Limitations of enclosure use below the lowest floor, if applicable. (i.e., parking, building access and limited storage).

30-3-4.1. Order of issuance.
The order of permit issuance shall be as follows:
(A) *Grading Permits:* Grading permits may be issued in advance of other permits and approvals except floodplain development permits, no impact / no-rise certification, and conditional letter of map revision (CLOMR) if required;

30-3-6. CERTIFICATES

30-3-6.4. Certificate of floor elevation/floodproofing.
(A) *Elevation Certificate:* An Elevation Certificate (FEMA Form 81-31) is required after the reference level is established. Within seven (7) calendar days of establishment of the reference level elevation, it shall be the duty of the permit holder to submit to the floodplain administrator a certification of the elevation of the reference level, in relation to mean sea level. Any work done within the seven (7) day calendar period and prior to submission of the certification shall be at the permit holder's risk. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further work being permitted to proceed. Failure to submit the certification or failure to make required corrections shall be cause to issue a stop work order for the project. A final as-built Elevation Certificate *(FEMA Form 81-31)* is required after construction is completed and prior to Certificate of Compliance issuance. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of final as-built construction of the elevation of the reference level and all attendant utilities. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to Certificate of Compliance issuance. In some instances, another certification may be required to certify corrected as-built construction. Failure to submit the certification or failure to make required corrections shall be cause to withhold the issuance of a Certificate of Compliance.
(B) *Floodproofing Certificate:* If non-residential floodproofing is used to meet the regulatory flood protection elevation requirements, a Floodproofing Certificate (FEMA Form 81-65), with supporting data and an operational plan, is required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the floodplain administrator a

certification of the floodproofed design elevation of the reference level and all attendant utilities, in relation to mean sea level. Floodproofing certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. The floodplain administrator shall review the certificate data and plan. Deficiencies detected by such review shall be corrected by the applicant prior to permit approval. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit. Failure to construct in accordance with the certified design shall be cause to withhold the issuance of a Certificate of Compliance.

(C) *Manufactured Dwelling:* If a manufactured dwelling is placed within Zone A, AO, AE, A1-A30, or X (Future) and the elevation of the chassis is more than 36 inches in height above grade, an engineered foundation certification is required per Section 30-7-5.6(B)(3).

(D) *Watercourse Alteration:* If a watercourse is to be altered or relocated, a professional engineer's certified report containing all of the information described in Section 30-3-3.4(I) shall all be submitted by the permit applicant prior to issuance of a floodplain development permit.

(E) *Certification Exemptions:* The following structures, if located within Zone A, AO, AE, A1-A30, or X (Future) are exempt from the elevation/floodproofing certification requirements specified in items (A) and (B) of this subsection:

(1) Recreational vehicles meeting requirements of Section 30-7-5.6(B)(4)(a);

(2) Temporary structures meeting requirements of Section 30-7-5.6(B)(7); and

(3) Accessory structures less than 150 square feet meeting requirements of Section 30-7-5.6(B)(8). ~~If property is located in a flood hazard area, a Certificate of Floor Elevation or Floodproofing is required after the lowest floor is completed. Within twenty-one (21) days of establishment of the lowest floor elevation or floodproofing by whatever construction means, it shall be the duty of the permit holder to submit to the Enforcement Officer a certificate of the as-built elevation of the lowest floor, the as-built floodproofed elevation, or the as-built elevation of the bottom of the horizontal structural members of the lowest floor (whichever is applicable), in relation to mean sea level. Said certification shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. When floodproofing is utilized for a particular building, said certification shall be prepared by or under direct supervision of a professional engineer or architect and certified by same. Any work done within the twenty-one (21) day period and prior to submission of the certification shall be at the permit holder's risk. The Enforcement Officer shall review the floor elevation survey data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further progressive work being permitted to proceed. Failure to submit the survey or failure to make required corrections shall be cause to issue a stop-work order for the project.~~

30-4-2.1(D)(6) Location and amount of land in special flood hazard areas and any other lands not suitable for development;

30-4-3.3(I)(4) Land within an ~~a Floodway or floodway fringe~~ area of special flood hazard may be used to provide not more than fifty (50) percent of the open space required in a planned unit development.

30-4-3.4(A)(1)(d) The location and amount of land in special flood hazard areas and any other lands not suitable for development; and

30-5-2.50(B)(6) Operation: No filling is permitted in any special flood hazard area. No filling is permitted in minor drainageways unless the drainage has been piped in accordance with approved plans. No filling is permitted in utility easements.

30-7-5. FLOOD DAMAGE PREVENTION

30-7-5.1. Authority.
The Legislature of the State of North Carolina has in NCGS 143, Article 21, Part 6; and NCGS 160A, Article 458.119, Parts 3, 5, and 8; and NCGS 160A, Article 8 empowered delegated to local governmental units the responsibility to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry regulate flood hazard areas.

30-7-5.2. General.
(A) *Reason for Regulation of Flood Hazard Prone Areas:* The flood hazard prone areas of the city are subject to periodic inundation which could result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
(B) *Causes of Flood Losses:* These flood losses are caused by the cumulative effect of:
(1) Obstructions in floodplains causing increases in flood heights and velocities; and
(2) Occupancy in flood hazard prone areas of uses vulnerable to floods or other hazardous to other lands and uses which are inadequately elevated, inadequately floodproofed, or otherwise unprotected from flood damages.
(C) *Lands to Which This Section Applies:* This Section shall apply to all Aareas of Sspecial Fflood Hhazard and Future Conditions Flood Hazard Areas within the city and its extra-territorial jurisdiction.
(D) *Basis for Establishing the Areas of Special Flood Hazard and Future Conditions Flood Hazard Areas:* The Special Flood Hazard Areas and Future Conditions Flood Hazard Areas are those identified under the Cooperating Technical State (CTS) agreement between the State of North Carolina and FEMA in its Flood Insurance Study (FIS) and its accompanying Flood Insurance Rate Maps (FIRM), for Guilford County dated _____, which are adopted by reference and declared to be a part of this Ordinance. The areas of special flood hazard identified by the Federal Emergency Management Agency (FEMA) in its Flood Insurance Study dated December 5, 1989, for the City of Greensboro and November 18, 1988, for Guilford County with accompanying maps and other supporting data, and any revision thereto, are adopted by reference and declared to be a part of this Ordinance.

30-7-5.3. Floodplain development application, permit, and certification requirements.
(A) *Application for Permit:* Application for a Floodplain Development Permit shall be made in accordance with Section 30-3-3.4 (Floodplain Development Permit).
(B) *Certificate of Floor Elevation/Floodproofing:* When a property is located in a special flood hazard area or when a structure is floodproofed, a certificate shall be provided in accordance with Section 30-3-6.4 (Certificate of Floor Elevation/Floodproofing).

30-7-5.4. Permitted and prohibited structures and activities (See Appendix 5: Illustrations).

(A) *Floodways and Non-Encroachment Areas:* Areas designated as floodways or non-encroachment areas are located within the Special Flood Hazard Areas established in Section 30-7-5.2(D). The floodways and non-encroachment areas are ~~is an~~ extremely hazardous areas due to the velocity of floodwaters which carry debris and potential projectiles and ~~has~~ have erosion potential. The following provisions, ~~Except for streets, bridges, and utilities as permitted in Section 30-7-5.4(A)(1)(f),~~ in addition to standards outlined in Section 30-7-5.6(A) and (B) shall apply to all development within such areas:

(1) N~~n~~o encroachments, including fill, new construction, substantial improvements, or other developments shall be permitted unless it has been demonstrated that:

(a) The proposed encroachments will not result in any increase in flood levels during occurrence of the base flood, based on hydraulic and hydrologic analysis performed in accordance with standard engineering practice and presented to the Enforcement Officer prior to issuance of a floodplain development permit, or ~~certification (with supporting technical data) by a registered professional engineer is provided, demonstrating that such encroachments shall not result in any increase in flood levels during occurrence of the base flood discharge~~.

(b) A Conditional Letter of Map Revision (CLOMR) has been approved by FEMA. A Letter of Map Revision (LOMR) must also be obtained upon completion of the proposed encroachment.

(2) If Section 30-7-5.4(A)(1) is satisfied, all development shall comply with all applicable flood hazard reduction provisions of this Ordinance.

(3) No manufactured homes shall be permitted, except replacement manufactured homes in an existing manufactured dwelling park or subdivision, provided the following provisions are met:

(a) The anchoring and the elevation standards of Section 30-7-5.6(B)(3); and

(b) The no encroachment standard of Section 30-7-5.4(A)(1).

~~(1) Permitted Structures and Activities: The following shall be permitted within the floodway to the extent that they are otherwise permitted by this Ordinance and provided that they do not employ structures or fill except as specified herein:~~

~~(a) General farming, pasture, outdoor plant nurseries, horticulture, forestry, wildlife sanctuary, game farm, and other similar agricultural, quarrying, wildlife, and related uses;~~

~~(b) Ground level loading areas, ground level automobile parking areas, rotary aircraft ports, and other similar industrial and commercial uses;~~

~~(c) Tractor-trailer parking, provided that no trailers shall be detached from tractors;~~

~~(d) Lawns, gardens, play areas, and other similar uses;~~

~~(e) Golf courses, tennis courts, driving ranges, archery ranges, picnic grounds, parks, swimming pools, hiking or horseback riding trails, open space, and other similar private and public recreational uses;~~

~~(f) Streets, bridges, utility lines, storm drainage facilities, sewage or waste treatment facilities, water supply facilities, and other similar public or private utility uses, but only if the proposed activity, combined with the allowable encroachment of the floodway fringe and with any previously placed or previously approved encroachment in the floodway, will not increase the base flood elevation by more than one (1) foot. The increase in base flood elevation due to allowable encroachment of the floodway fringe is listed in the Floodway Data Table in the Flood Insurance Study prepared by the Federal Emergency Management Agency (FEMA). Fill material for utilities shall be permitted only if approved by the City Engineer;~~

~~(g) Temporary facilities such as displays, circuses, carnivals, or similar transient amusement enterprises;~~

~~(h) Boat docks, ramps, piers, or similar structures;~~
~~(i) Dams;~~
~~(j) Grading but not fill; and~~
~~(k) Cantilevered portions of structures, provided that foundation and supports are located outside the floodway and the underside of the cantilevered portion is at least one (1) foot above base flood elevation.~~
~~(2) Prohibited Activities: Storage or processing of materials that are flammable, corrosive, toxic, or explosive, or that could otherwise be injurious to human, animal, or plant life in time of flood is prohibited in the floodway.~~
~~(B) *Floodway Fringe*:~~
~~(1) Permitted Structures and Activities: The following shall be permitted within the floodway fringe to the extent that they are otherwise permitted by this Ordinance:~~
~~(a) Any structure and activity as permitted and regulated in the floodway.~~
~~(b) Any residential or nonresidential use permitted by this Ordinance provided that the finished floor elevation of any structure is located one (1) foot or more above base flood elevation. Heating and electrical equipment installed below that elevation shall be floodproofed.~~
~~(c) Any nonresidential structure permitted by this Ordinance provided that all portions of the structure are floodproofed, as provided in this Section, to an elevation at least one (1) foot above base flood elevation. Heating and electrical equipment installed below elevation shall be floodproofed. All floodproofing shall be certified by a professional engineer registered in North Carolina.~~
~~(2) Prohibited Activities: Activities prohibited below one (1) foot above base flood elevation are the storage or processing of materials that are flammable, corrosive, toxic, or explosive or which could otherwise be injurious to human, animal, or plant life in time of flood.~~

30-7-5.5. Warning and disclaimer of liability.
The degree of flood protection required by this Ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur ~~on rare occasions~~. Actual ~~F~~flood heights may be increased by manmade or natural causes. This Ordinance does not imply that land outside the A~~a~~reas of S~~s~~pecial F~~f~~lood H~~h~~azard and Future Conditions Flood Hazard Areas, or uses permitted within such areas, will be free from flooding or flood damage. This Ordinance shall not create liability on the part of the City or any officer or employee thereof for any flood damages that result from reliance on this Ordinance or any administrative decision lawfully made hereunder.

30-7-5.6. Provisions for flood hazard reduction.
(A) *General Standards:* In all A~~a~~reas of S~~s~~pecial F~~f~~lood H~~h~~azard and Future Conditions Flood Hazard Areas the following provisions are required:
(1) All new construction ~~or~~ and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, ~~or~~ and lateral movement of the structure;
(2) All new construction ~~or~~ and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
(3) All new construction ~~or~~ and substantial improvements shall be constructed by methods and practices that minimize flood damages;
(4) Electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating

within the components during conditions of flooding. These include, but are not limited to, HVAC equipment, water softener units, bath/kitchen fixtures, ductwork, electric/gas meter panels/boxes, utility/cable boxes, appliances (washers, dryers, refrigerators, freezers, etc.), hot water heaters, and electric outlets/switches;

(5) All new ~~or~~ and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system;

(6) New ~~or~~ and replacement sanitary sewerage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into flood waters;

(7) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding;

(8) Any alteration, repair, reconstruction, or improvements to a structure which is in compliance with the provisions of this Ordinance shall meet the requirement of "new construction" as contained in this ~~Section~~ Ordinance; ~~and~~

(9) ~~Fill material graded to drain, provided such is protected against erosion. Any fill material on which a structure is to be located shall be extended at grade ten (10) feet beyond the limits of the structure foundation, and shall have a side slope no steeper than two (2) feet horizontal to one (1) foot vertical.~~ Nothing in this Section shall prevent the repair, reconstruction, or replacement of a building or structure existing on the effective date of this Ordinance and located totally or partially within the floodway, non-encroachment area, or stream setback, provided there is no additional encroachment below the regulatory flood protection elevation in the floodway, non-encroachment area, or stream setback, and provided that such repair, reconstruction, or replacement meets all of the other requirements of this Ordinance.

(10) New solid waste disposal facilities and sites, hazardous waste management facilities, salvage yards, and chemical storage facilities shall not be permitted, except by variance as specified in Section 30-9-6.12(D)(11). A structure or tank for chemical or fuel storage incidental to an allowed use or to the operation of a water treatment plant or wastewater treatment facility may be located in a Special Flood Hazard Area or Future Conditions Flood Hazard Area only if the structure or tank is either elevated or floodproofed to at least the regulatory flood protection elevation and certified according to Section 30-3-6.4 of this Ordinance.

(11) All subdivision plats and other development plans shall be consistent with the need to minimize flood damage.

(12) All subdivision plats and other development plans shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.

(13) All subdivision plats and other development plans shall have adequate drainage provided to reduce exposure to flood hazards.

(14) All subdivision plats and other development plans shall have received all necessary permits from those governmental agencies for which approval is required by federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334 prior to land disturbance.

(B) *Specific Standards:* In all A~~a~~reas of S~~s~~pecial F~~f~~lood H~~h~~azard where B~~b~~ase F~~f~~lood E~~e~~levation (BFE) data has been provided~~,~~ and in Future Conditions Flood Hazard Areas where Future Conditions Flood Elevations data has been provided, as set forth in Section 30-7-5.2(D) or Section 30-9-10.3 the following provisions, in addition to Section 30-7-5.6(A), are required:

(1) Residential Construction: New construction ~~or~~ and substantial improvement of any residential structure shall have the ~~lowest floor~~ reference level, including basement, elevated no lower than ~~one (1) foot above~~ the ~~base~~ regulatory flood protection elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the equalization of hydrostatic forces on both sides of the walls of enclosures below the lowest floor ~~unimpeded movement of floodwaters~~ shall be provided.

(2) Nonresidential Construction: New construction ~~or~~ and substantial improvement of any commercial, industrial, or other nonresidential structure shall have the ~~lowest floor~~ reference level, including basement, elevated no lower than ~~one (1) foot above~~ the regulatory ~~base~~ flood protection elevation. Structures located in A, AE, A1-A30 and X (Future) zones may be floodproofed to the regulatory flood protection elevation in lieu of elevation provided that all areas of the structure, together with attendant utility and sanitary facilities, below the regulatory flood protection elevation ~~required elevation~~ are water tight with walls substantially impermeable to the passage of water, using structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. For AO Zones, the floodproofing elevation shall be in accordance with Section 30-7-5.6(E)(2). A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification shall be provided to the Enforcement Officer as set forth in Section 30-3-6.4 of this Ordinance along with the operational and maintenance plans.

(3) Manufactured ~~Housing~~ Dwellings:

(a) New or replacement ~~M~~manufactured dwellings ~~that are placed, substantially improved, or repaired after incurring substantial damage as the result of a flood~~ shall be elevated on a permanent foundation such that the ~~lowest floor~~ reference level of the manufactured dwelling is elevated no lower than ~~one (1) foot above~~ the regulatory ~~base~~ flood protection elevation and shall be securely anchored to an adequately anchored foundation ~~system~~ to resist flotation, collapse, and lateral movement, either by engineer certification, or ~~. For the purpose of this requirement, manufactured dwellings shall be anchored to resist flotation, collapse, or lateral movement~~ in accordance with the most current edition of the State of North Carolina Regulations for Manufactured ~~obile~~ Homes ~~and Modular Housing~~ adopted by the Commissioner of Insurance pursuant to NCGS §143-143.15.

(b) When the required elevation will be met by elevating the chassis ~~at least~~ thirty-six (36) inches or less above grade, the chassis shall be supported by reinforced piers or ~~other foundation elements of at least equivalent strength~~ engineered foundation. When the elevation of the chassis is above thirty-six (36) inches in height, engineering certification is required.

(c) All enclosures or skirting below the lowest floor shall meet the requirements of Section 30-7-5.6(B)(5)(a), (b), and (c)

(~~c~~d) An evacuation plan shall be prepared for evacuation of all residents of all new, substantially improved, or substantially damaged manufactured dwelling parks or subdivisions located within flood ~~hazard~~ prone areas. This plan shall be filed with and approved by the Enforcement Officer and the local Emergency Management Coordinator.

(4) Recreational Vehicles: A recreational vehicle is ready for highway use if it is on wheels or jacking system, is attached to the site only by quick-disconnect type utilities and security devices, and has no permanently attached additions. Recreational vehicles placed on sites shall either:

(a) Be in the recreational vehicle park for fewer that 180 consecutive days and be fully licensed and ready for highway use; or

(b) Meet the requirements of Sections 30-7-5.3, Floodplain Development Application, Permit and Certification requirements; 30-7-5.6(A), General Standards, and 30-7-5.6(B)(3), just as if the recreational vehicle were a manufactured dwelling.

(5) Elevated Buildings;: Fully enclosed area, of Nnew construction or substantially improvedments structures, which is below the lowest floor: of elevated buildings that include fully enclosed areas that are usable solely for the parking of vehicles, building access, or storage in an area other than a basement and which are subject to flooding shall be designed to preclude living space and to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters.

(a) Shall not be designed or used for human habitation, but shall only be used for the parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator). The interior portion of such enclosed area shall not be partitioned or finished into separate rooms, except to enclose storage areas.

(b) Shall be constructed entirely of flood resistant materials below the regulatory flood protection elevation;

(ca) Shall include in Zones A, AO, AE, A1-A30, and X (Future) flood openings to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. Designs for complying with this requirement must be either certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:

(i) Provide a minimum of two flood openings on different sides of each enclosed area subject to flooding having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding;

(ii) If a building has more than one enclosed area, each enclosed area must have flood openings to allow floodwaters to automatically enter and exit;

(iii) The bottom of all required flood openings shall be no higher than one (1) foot above the adjacent grade; and

(iviii) Flood Oopenings may be equipped with screens, louvers, valves, or other coverings or devices provided they permit the automatic flow of floodwaters in both directions; and.

(v) Enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require flood openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires flood openings as outlined above.

(b) Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator).

(c) The interior portion of such enclosed area shall not be partitioned or finished into separate rooms, except to enclose storage areas.

(6) Additions / Improvements.

(a) Additions and/or improvements to pre-FIRM structures, when the additions and/or improvements in combination with any interior modifications to the existing structure are not a substantial improvement, shall be designed to minimize flood damages and must not be any more non-conforming than the existing structure.

(b) Additions and/or improvements to pre-FIRM structures, when the additions and/or improvements in combination with any interior modifications to the existing structure are a

substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction.

(c) Additions to post-FIRM structures with no modifications to the existing structure other than a standard door in the common wall shall require only the addition to comply with the standards for new construction.

(d) Additions and/or improvements to post-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are not a substantial improvement, shall comply with the standards for new construction.

(e) Additions and/or improvements to post-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are a substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction.

(f) Where an independent perimeter load-bearing wall is provided between the addition and the existing building, the addition(s) shall be considered a separate building and only the addition must comply with the standards for new construction.

(7) Temporary Nonresidential Structures. Prior to the issuance of a floodplain development permit for a temporary structure, the applicant must submit to the floodplain administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood or other type of flood warning notification. The following information shall be submitted in writing to the floodplain administrator for review and written approval:

(a) A specified time period for which the temporary use will be permitted. Time specified may not exceed three months, renewable up to one year;

(b) The name, address, and phone number of the individual responsible for the removal of the temporary structure;

(c) The time frame prior to the event at which a structure will be removed (i.e., minimum of 72 hours before landfall of a hurricane or immediately upon flood warning notification);

(d) A copy of the contract or other suitable instrument with the entity responsible for physical removal of the structure; and

(e) Designation, accompanied by documentation, of a location outside the Special Flood Hazard Area or Future Conditions Flood Hazard Area, to which the temporary structure will be moved.

(8) Accessory Structures. An accessory structure with a footprint less than 150 square feet that satisfies the criteria outlined below does not require an elevation or floodproofing certificate. Elevation or floodproofing certifications are required for all other accessory structures in accordance with Section 30-3-6.4. When accessory structures (sheds, detached garages, etc.) are to be placed within a Special Flood Hazard Area or Future Conditions Flood Hazard Area, the following criteria shall be met:

(a) Accessory structures shall not be used for human habitation (including working, sleeping, living, cooking or restroom areas);

(b) Accessory structures shall not be temperature-controlled;

(c) Accessory structures shall be designed to have low flood damage potential;

(d) Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters;

(e) Accessory structures shall be firmly anchored in accordance with Section 30-7-5.6(A)(1);

(f) All service facilities such as electrical shall be installed in accordance with Section 30-7-5.6(A)(4); and

(g) Flood openings to facilitate automatic equalization of hydrostatic flood forces shall be provided below regulatory flood protection elevation in conformance with Section 30-7-5.6(B)(5)(a).

(C) *Standards for ~~Streams~~ Floodplains ~~W~~without Established ~~Floodways or~~ Base Flood Elevations:* Within the areas of special flood hazard ~~established~~ designated as Approximate Zone A and established in Section 30-7-5.2(D) ~~in this Section are small streams~~ where no ~~base~~ Base F~~f~~lood Elevation (BFE) data has been provided by FEMA, the following provisions, in addition to Section 30-7-5.6(A), ~~or where no floodways have been identified. The following provisions~~ apply within such areas:

(1) ~~Except for streets, bridges, and utilities as permitted in Section 30-7-5.4(A)(1)(f), no encroachments shall be permitted in drainage maintenance and utility easements as required by Article VI (Subdivisions: Procedures and Standards).~~ No encroachment, including fill, new construction, substantial improvements, or new development shall be permitted within ~~the~~ a distance ~~from the stream centerline designated in Table 30-7-5-1 or~~ of ~~twenty~~ thirty (~~2~~30) feet each side from the top of the stream bank or five times the width of the stream, whichever is greater, unless certification (with supporting technical data) by a registered professional engineer is provided demonstrating that such encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

~~TABLE 30-7-5-1~~

~~Stream Nonencroachment Widths~~

~~TABLE INSET:~~

~~Cubic Feet Per Second (cfs) in 100-year Storm~~	~~Required Distance from Stream Centerline (ft.)~~
~~5--17~~	~~15~~
~~18--70~~	~~30~~
~~<70~~	~~50, plus 1/2 channel width~~

(2) The Base Flood Elevation (BFE) used in determining the regulatory flood protection elevation shall be determined based on one of the following criteria set in priority order:

(~~2~~a) If B~~b~~ase F~~f~~lood E~~e~~levation (BFE) data is available from other sources, all new construction and substantial improvements within such areas shall comply with all applicable ~~flood hazard area~~ provisions of this ~~Section~~ Ordinance and shall be elevated or floodproofed in accordance with ~~elevations~~ standards ~~established~~ in ~~this~~ Section 30-9-10.3(K) and (L).

(b) All subdivision, manufactured dwelling site and other development proposals shall provide Base Flood Elevation (BFE) data if development is greater than five (5) acres or has more than fifty (50) lots/manufactured dwelling sites. Such Base Flood Elevation (BFE) data shall be adopted by reference per Section 30-7-5.2(D) to be utilized in implementing this Ordinance. When floodproofing is utilized, certification shall be provided in accordance with Section 30-3-6.4(B).

(~~3~~c) When base flood elevation data is not available from a federal, State, or other source as outlined above, ~~and the flow is five hundred (500) cubic feet per second (cfs) or greater for a one-hundred-year storm, the lowest floor including the basement~~ the reference level shall be

elevated ~~at least one (1) foot above~~ no lower than the ~~one-hundred-year~~ regulatory flood protection elevation ~~certified by a registered professional engineer~~.

~~(4) When base flood elevation data is not available from a federal, State, or other source, and the flow is less than five hundred (500) cfs for a one-hundred-year storm, the lowest floor including the basement shall be elevated at least two (2) feet above the highest adjacent grade.~~

(D) *Standards for Riverine Floodplains with BFE but without Established Floodways or Non-Encroachment Areas:* Along rivers and streams where BFE data is provided but neither floodway nor non-encroachment areas are identified for a Special Flood Hazard Area on the FIRM or in the FIS report, the following requirements shall apply to all development within such areas:

(1) Standards outlined in Sections 30-7-5.6(A) and (B); and

(2) Until a regulatory floodway or non-encroachment area is designated, no encroachments, including fill, new construction, substantial improvements, or other development, shall be permitted unless certification with supporting technical data by a registered professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

(E~~D~~) *Standards for Areas of Shallow Flooding (AO Zones):* Located within the areas of special flood hazard established in ~~this~~ Section 30-7-5.2(D) are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one (1) to three (3) feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate. In addition to Section 30-7-5.6(A), all new construction and substantial improvement, ~~The following provisions~~ shall ~~apply within such areas~~ meet the following requirements:

(1) ~~All new construction and substantial improvements of residential structures shall have~~ T~~t~~he ~~lowest floor~~ reference level ~~including the basement~~ shall be elevated at least as high ~~to~~ as the depth number specified on the Flood Insurance Rate Map (FIRM), in feet, plus a freeboard of one (1) foot above the highest adjacent grade. If no depth number is specified, ~~the lowest floor including the basement~~ reference level shall be elevated at least two (2) feet above the highest adjacent grade plus a freeboard of one (1) foot.

(2) All new construction and substantial improvements of nonresidential structures shall:

(a) have the reference level elevated at least as high as the depth number specified on the Flood Insurance Rate Map (FIRM), in feet, plus a freeboard of one (1) foot above the highest adjacent grade. If no depth number is specified, reference level shall be elevated at least two (2) feet above the highest adjacent grade plus a freeboard of one (1) foot ~~lowest floor including the basement elevated to the depth number specified on the Flood Insurance Rate Map, in feet, above the highest adjacent grade. If no depth number is specified, the lowest floor including the basement shall be elevated at least two (2) feet above the highest adjacent grade~~; or

(b) be completely floodproofed, together with attendant utility and sanitary facilities, to or above that level required in Section 30-7-5.6(E)(1) so that ~~any space~~ the structure below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Certification is required as per Section 30-3-6.4 and Section 30-7-5.6(B)(2).

30-7-5.7. Amendments to the F~~f~~lood I~~i~~nsurance R~~r~~ate M~~m~~ap.

(A) *Grounds for Amendments:* The location of any floodway or ~~floodway fringe~~ area of special flood hazard may be amended by FEMA in cases where:
(1) A flood control project of the federal, State, county, or city government has substantially altered the flood hazard; or
(2) Flood data indicates that the boundaries as shown on the Flood Insurance Rate Map are no longer correct; or
(3) A private individual, corporation, firm, or governmental agency has submitted plans to the appropriate local authority, State agencies, and the Federal Emergency Management Agency for a channel improvement or relocation, ~~of a~~ street or bridge which would affect the location of the existing zone boundaries as shown on the Flood Insurance Rate Map.
(B) *Amendment as a Prerequisite:* Approval from FEMA of a Flood Insurance Rate Map amendment is a prerequisite for a Floodplain Development Permit in the following situations:
(1) ~~w~~Whenever ~~the~~ a proposed channel improvement or relocation will occur~~, street, bridge, or other development or proposed use combined with the allowable encroachment of the floodway fringe and with any previously placed or previously approved encroachment in the floodway will increase the base flood elevation by more than one (1) foot.~~;
(2) Any fill or development activity is proposed in a special flood hazard area without an established floodway or non-encroachment area; and
(3) Encroachment into a regulatory floodway or non-encroachment area.
(4) ~~The increase in base flood elevation due to the allowable encroachment of the floodway fringe is listed in the Floodway Data Table in the Flood Insurance Study prepared by the Federal Emergency Management Agency (FEMA).~~ A "No ~~Rise~~ Impact Certification" approved by ~~FEMA~~ the City shall be evidence that a FIRM amendment is not required for the development covered by the certification.

30-9-6. BOARD OF ADJUSTMENT

30-9-6.10. Variances.
(C) *General Requirements:*
(5) A variance may be granted where a building permit has been issued and, due to unintentional error of the Enforcement Officer in determining the location of the structure on the property, there is a minimal violation of the dimensional requirements in Article 4, provided that such relief may be granted without substantially impairing the purpose and intent of this Ordinance.

30-9-6.12. Flood damage prevention appeals.
(A) *Authority:* The Board of Adjustment shall hear and decide appeals and requests for variances from the requirements of the flood damage prevention provisions of this Ordinance.
(B) *Appeal and Variance Considerations:* In passing upon such applications, the Board of Adjustment shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this Ordinance, and:
(1) The danger that materials may be swept onto other lands to the injury of others;
(2) The danger to life and property due to flooding or erosion damage;
(3) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
(4) The importance of the services provided by the proposed facility to the community;

~~(5) The necessity to the facility of a waterfront location, where applicable;~~
(~~6~~5) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
(~~7~~6) The compatibility of the proposed use with existing and anticipated development;
(~~8~~7) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
(~~9~~8) The safety of access to the property in times of flood for ordinary and emergency vehicles;
(~~10~~9) The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters, and the effects of wave action, if applicable, expected at the site; and
(~~11~~10) The costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges; ~~and~~
(~~12~~11) The effect that granting the appeal or variance would have on the City's eligibility for Federal Flood Insurance. In addition, if the request is for a functionally dependent facility, the Board of Adjustment shall consider the necessity to the facility of a waterfront location.
(C) *Written Report and Additional Conditions.* A written report addressing each of the above factors shall be submitted with the application for a variance.
(D~~C~~) *Granting of Variances:*
(1) Variances may be granted for:
(a) T~~t~~he repair or rehabilitation of historic structures upon the determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
(b) Functionally dependant facilities (see definition in Section 30-2-2) provided such facilities are protected by methods that minimize flood damages.
(c) Any other type of development provided it meets the requirements stated in this section.
(2) Variances shall not be granted when the variance will make the structure in violation of other federal, State, or local laws, regulations, or ordinances.
(~~2~~3) Variances shall not be granted within any designated floodway or non-encroachment area if any increase in flood levels during the base flood discharge would result.
(~~3~~4) Variances shall only be granted upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
(5) Variances shall only be issued prior to development permit approval unless the condition causing the need for the variance was unforeseeable to the developer.
(~~4~~6) Variances shall only be granted upon:
(~~i~~a) A showing of good and sufficient cause;
(~~ii~~b) A determination that failure to grant the variance would result in exceptional hardship; and
(~~iii~~c) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, creation of a nuisance, fraud on or victimization of the public, or conflict with existing local laws or ordinances.
(~~5~~7) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the B~~b~~ase F~~f~~lood E~~e~~levation (BFE) and the elevation to which the structure is to be built and a written statement that the cost of flood insurance will be commensurate with the

increased risk resulting from the reduced lowest floor elevation. Such notification shall be maintained with a record of all variance actions.
(8) The Floodplain Administrator, hereinafter referred to as the Enforcement Officer shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency and the State of North Carolina upon request.
(9) A variance may be issued for solid waste disposal facilities, hazardous waste management facilities, salvage yards, and chemical storage facilities that are located in Special Flood Hazard Areas or Future Conditions Flood Hazard Areas provided that all of the following conditions are met:
(a) The use serves a critical need in the community.
(b) No feasible location exists for the use outside the Special Flood Hazard Area or Future Conditions Flood Hazard Area.
(c) The reference level of any structure is elevated or floodproofed to at least the regulatory flood protection elevation.
(d) The use complies with all other applicable federal, State and local laws.
(e) The City has notified the Secretary of the North Carolina Department of Crime Control and Public Safety of its intention to grant a variance at least thirty (30) calendar days prior to granting the variance.

30-9-10. ENFORCEMENT OFFICER

30-9-10.3. Floodplain administrator ~~damage prevention administration~~ duties.
The Floodplain Administrator, hereinafter referred to as the Enforcement Officer, shall perform, but not be limited to, the following duties:
(A) Review all floodplain development applications and approve permits for all proposed development within Special Flood Hazard Areas and Future Conditions Flood Hazard Areas to assure that the requirements of this Ordinance have been satisfied.
(B~~A~~) Advise permittee that additional federal or State permits (Wetlands, Endangered Species, Erosion and Sedimentation Control, Riparian Buffers, Mining, etc.) may be required and ~~if specific federal or State permits are known,~~ require that copies of such permits be provided and maintained on file with the floodplain development permit;
(C~~B~~) Notify adjacent communities and the N. C. Department of Crime Control and Public Safety, Division of Emergency Management, State Coordinator for the National Flood Insurance Program prior to any alteration or relocation of a watercourse ~~within a designated Flood Hazard Boundary~~, and submit evidence of such notification to the Federal Emergency Management Agency (FEMA);
~~(C) Provide the NC Department of Crime Control and Public Safety, Division of Emergency Management, State Coordinator for the National Flood Insurance Program with two (2) copies of the maps delineating new corporate limits within six months from date of annexation or change in corporate boundaries;~~
(D) Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is ~~not diminished~~ maintained;
(E) Prevent encroachments within floodways and non-encroachment areas unless the certification and flood damage prevention provisions of Section 30-7-5.4 are met;
(F) Obtain actual elevation (in relation to mean sea level) of the reference level (including basement) and all attendant utilities of all new and substantially improved structures, in

accordance with Section 30-3-6.4(A) ~~Verify and record the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures~~;
(G) Obtain actual elevation (in relation to mean sea level) to which all new and substantially improved nonresidential structures and utilities have been floodproofed, in accordance with Section 30-3-6.4(B) ~~Verify and record the actual elevation (in relation to mean sea level) to which the new or substantially improved structures have been floodproofed~~;
(H) Obtain actual elevation (in relation to mean sea level) of all public utilities in accordance with Section 30-7-5.6(A)(12);
(I~~H~~) When floodproofing is utilized for a particular structure, obtain certifications from a registered professional engineer or architect in accordance with Section 30-3-6.4(B) and Section 30-7-5.6(B)(2);
(J~~I~~) Where interpretation is needed as to the exact location of boundaries of the A~~a~~reas of S~~s~~pecial F~~f~~lood H~~h~~azard or Future Conditions Flood Hazard Areas (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), make the necessary interpretation. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this Article;
(K~~J~~) When B~~b~~ase F~~f~~lood E~~e~~levation (BFE) data ~~or floodway data have~~ has not been provided in accordance with Section 30-7-5.2(D), the Enforcement Officer(s) shall obtain, review, and reasonably utilize any B~~b~~ase F~~f~~lood E~~e~~levation data ~~and~~ along with floodway data or non-encroachment area data available from a federal, S~~s~~tate, or other source, including data developed pursuant to Section 30-7-5.6(C) ~~this Ordinance~~, in order to administer the provisions of this Ordinance.
(L) When Base Flood Elevation (BFE) data is provided but no floodway nor non-encroachment area data has been provided in accordance with Section 30-7-5.2(D), obtain, review, and reasonably utilize any floodway data or non-encroachment area data available from a Federal, State, or other source in order to administer the provisions of this Ordinance.
(M) When the lowest ground elevation of a parcel or in the case of a structure, the lowest adjacent grade and lowest floor, located in a Special Flood Hazard Area is above the Base Flood Elevation (BFE), advise the property owner of the option to apply for a Letter of Map Amendment (LOMA) from FEMA. Maintain a copy of the Letter of Map Amendment (LOMA) issued by FEMA in the floodplain development permit file.
(N) Maintain all records that pertain to the administration of this Ordinance and make these records available for public inspection.
(O) Make on-site inspections of work in progress. In exercising this power, the floodplain administrator has a right, upon presentation of proper credentials, to enter on any premises within the jurisdiction of the community at any reasonable hour for the purposes of inspection or other enforcement action.
(P) Issue stop work orders as required. Whenever a building or part thereof is being constructed, reconstructed, altered, or repaired in violation of this Ordinance, the floodplain administrator may order the work to be immediately stopped. The stop work order shall be in writing and directed to the person doing the work. The stop work order shall state the specific work to be stopped, the specific reason(s) for the stoppage, and the condition(s) under which the work may be resumed.
(Q) Revoke floodplain development permits as required. The floodplain administrator may revoke and require the return of the floodplain development permit by notifying the permit

holder in writing stating the reason(s) for the revocation. Permits shall be revoked for any substantial departure from the approved application, plans, or specifications; for refusal or failure to comply with the requirements of State or local laws; or for false statements or misrepresentations made in securing the permit. Any floodplain development permit mistakenly issued in violation of an applicable State or local law may also be revoked.
(R) Make periodic inspections throughout all special flood hazard areas within the jurisdiction of the community. The floodplain administrator and each member of his inspections department shall have a right, upon presentation of proper credentials, to enter on any premises within the territorial jurisdiction of the department at any reasonable hour for the purposes of inspection or other enforcement action.
(S) Follow through with enforcement procedures of Section 30-8-3.
(T) Review, provide input, and make recommendations for variance requests.
(U) Maintain a current map repository to include, but not limited to, the FIS Report, FIRM and other official flood maps and studies adopted in accordance with Section 30-7-5.2(D) of this Ordinance, including any revisions thereto including Letters of Map Change, issued by FEMA. Notify State and FEMA of mapping needs.
(V) Coordinate revisions to FIS reports and FIRMs, including Letters of Map Revision Based on Fill (LOMR-F) and Letters of Map Revision (LOMR).

30-9-12. APPEALS

30-9-12.4. Board of adjustment.
(A) Unless otherwise provided, the decision of an Enforcement Officer with regard to an interpretation of a zoning provision of this Ordinance, of a floodway or ~~floodway fringe~~ area of special flood hazard boundary, or of a zoning boundary may be appealed to the Board of Adjustment.

Special Flood Hazard Area

Floodway boundary

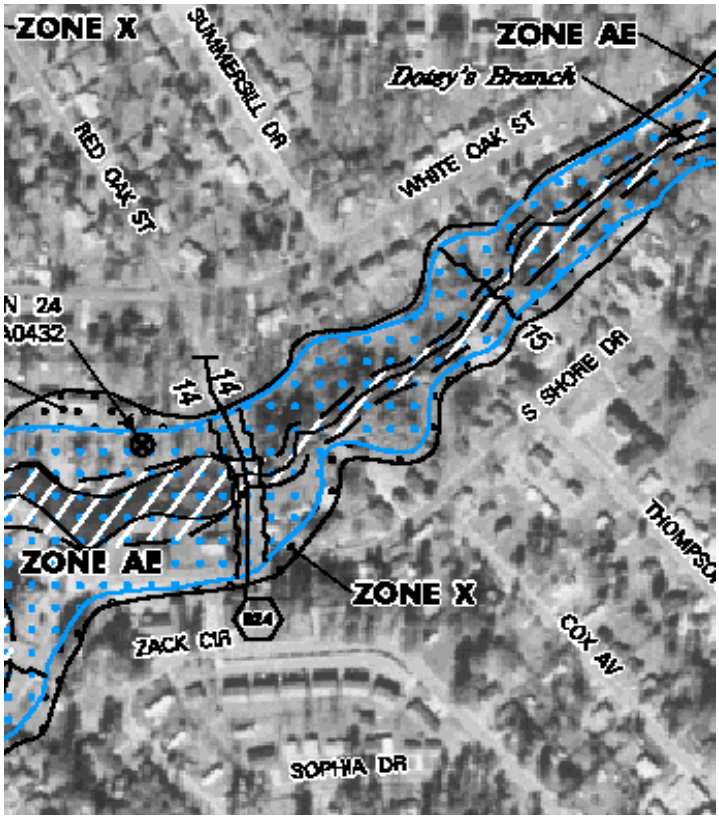
1% annual chance flood boundary (Zone AE)

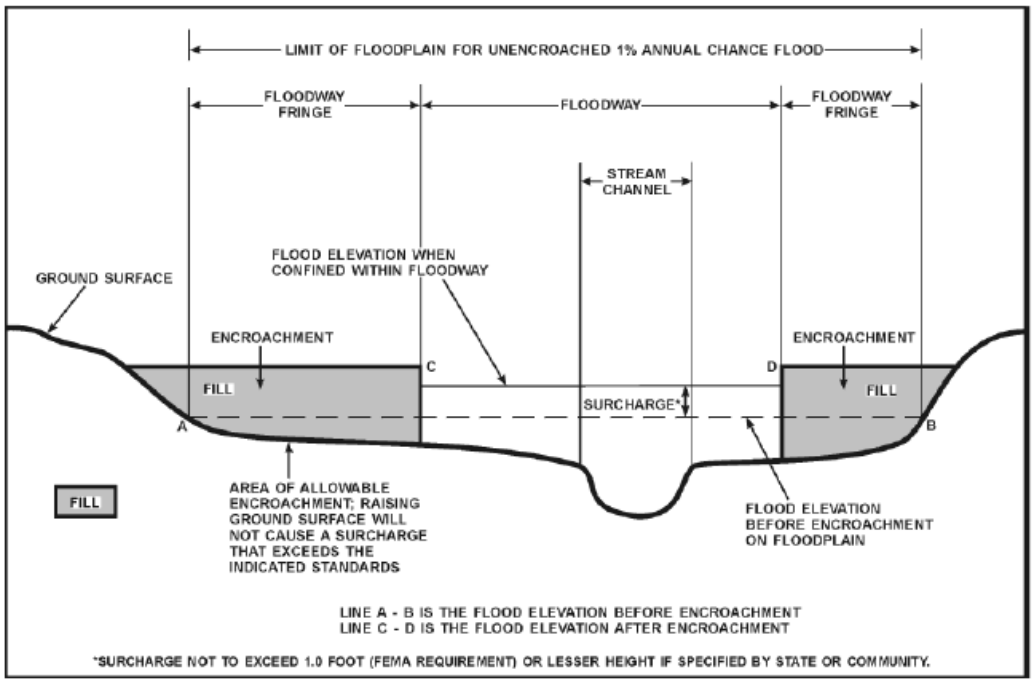
0.2% annual chance flood boundary

No structures or filling permitted in the floodway.

Structures located in the 1% annual chance flood boundary must have their lowest floor elevated to the regulatory flood protection elevation.

The area located within the 0.2% annual chance flood boundary is not regulated by the Flood Damage Prevention Section of the Ordinance.





SPECIAL FLOOD HAZARD AREA BOUNDARIES